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SUBJECT Khram GPS Power Plant near Molotovka

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1. The main building of the Khram-Tos hydro-electric power plant in Molotovka ($44^{\circ}07'E/41^{\circ}33'E$), Georgian SSR, was located about 100 meters from the western bank of the Khram river about 1,000 meters above sea level. The river is hemmed in by steep, wooded slopes so that the power plant would probably be difficult to spot from the air. A bare slope measuring 2,000x500 meters located just downstream from the power plant might serve as a landmark. (1)
2. The water chamber was three quarters up the slope, about 200 meters above the power plant. The pipe line from the water reservoir terminated there. Three supply pipes with an inner diameter of 1.2 meters and a wall thickness of 25 mm led from the water chamber to the power plant. The pipes consisted of welded sections 8 meters long and rested on concrete supports measuring 8x3 $\frac{1}{2}$ meters. The pipe line inclined at an angle of 25 to 35°.
3. The main building of the power plant was a four-story concrete structure measuring about 60x18x25 meters. (2) The concrete roof was supported by concrete piers.

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b2. [redacted] offices were on the ground floor of the main building. The second floor housed the switching installations with a total of 46 British switchboards. Technical offices, the telephone exchange and a transmitter were on the third floor. [redacted] current regulators were located on the fourth floor which comprised several rooms separated from each other by steel doors. The cable room with Belgian switching installations was located on the fifth floor. From there cables led to the open-air high-tension system.

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5. The main building housed three turbines, [redacted] the three turbines, which took up a third of the basement, were

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they must originally have come from Germany since the German eagle and the swastika were visible under the new coat of paint. According to [redacted] the large traveling crane and the insulators of the open-air installation had come from Germany. The switchboards and cables were of British origin. Some of the insulators and switching installations had been delivered [redacted] Electric motors, lathes and milling machines were of [redacted] make as could be ascertained from firm plates.

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6. [redacted] each of the three turbines had a normal output of slightly more than 30,000 kw. One of the three turbines was to be kept in reserve. The first turbine started operating on 31 December 1947, the second was tested in the spring of 1948, the third had not been used by June 1948 [redacted]

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7. [redacted] the rating plates of the turbines showed that they had a capacity of 30,000 kw each. The first turbine was in use on 1 May 1948, the second on 31 December 1948 and the third on 1 May 1949. Usually only two turbines were in operation since there was not enough water for all three turbines.

8. [redacted] The perpendicular shaft was about 6 meters long, it had a diameter of 60 cm at the point where the blades were attached, of 70 cm in the middle, and of 50 cm at the upper end. The oval blades were 30x60 cm large. The blades are driven by three pipes each of which served three blades. The water pressure was increased by the installation of a nozzle at the mouth of the pipes. The generator was mounted at the upper end of the turbine shaft. From there the current was sent to the cable room on the fifth floor through a cable duct which in the middle of the room met the cable ducts of the other two generators.

9. The towers of the high-tension line to Tiflis were about 15 meters high and about 500 meters apart. The line consisted of three cables about the thickness of a finger. (3)

10. In addition to 25 specialists from Leningrad about 50 Soviet workers including a few women were employed in the main building of the power plant. Another 100 laborers worked in the workshops. The Poles were gradually replaced by Soviets.

11. After the third turbine had started operating on 1 May 1949 the power plant was fully serviceable. [redacted] it was to supply Tiflis. Except for an administration building and another building, presumably a locksmith shop, for which the foundations were being laid, construction work at the power plant was completed.

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12. [redacted] the power plant started operating on 1 June 1949 and that it delivered current to Tiflis. [redacted] the reservoir dam was completed in the fall of 1949. The core of the dam is of concrete and its profile line is convex toward the reservoir. Earth was piled on both sides of the concrete core of the dam which at the bottom is four times as wide as at the crest. The earth was secured by quarry stones. Five water inlets were on the northern side of the dam and the overflowing water was returned to the old river bed via steps built of quarry stones. The dam was 150 meters long and 4 meters wide at the crest. At the highest point over the river bed it was 20 meters high. (4)

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13. The reservoir and the water chamber are connected by a tunnel which had to be blasted through the rocks. The tunnel has an oval cross section, the roof having a flatter arching than the bottom. Tall P's could just reach the roof with their finger tips. (5)

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Comments.

- (1) See Annex 1 for sketch indicating the location of the power plant. Annex 2 contains a sketch map of the power plant and immediate vicinity.

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- (2) See Annexes 3 and 4 for detailed sketches of the main building of the power plant.

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- (3) See Annex 5 for a layout sketch of the power plant and a list of plant installations.

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- (4) See Annex 6 for sketch of the reservoir provided by

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- (5) Both the attached location sketches and the detailed drawings of the power plant are in agreement with previous information.

6 Annexes: 6 - Blueprints.

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